RIVERS AND FLOODS

By MONTROSE W. HAYES

[In charge River and Flood Division]

In January, 1933, floods occurred in the South Atlantic, the Gulf, and the Ohio Valley States, and in Oregon. The most important were in the Coosa, Alabama, and Tombigbee Rivers of Alabama, the White and Wabash of Indiana, the St. Francis and Ouachita of Arkansas, and the Tallahatchie of Mississippi.

The floods in the rivers of Alabama were a continuation of December rises, and the crest stages occurred in December, except in the lower reaches of the streams.

There were two rises in the White and Wabash. The first, from December 24 to January 9, was of moderate severity. The second was of minor consequence and prevailed from January 22 until the early part of February, but falling stages prevailed at the close of January.

In the St. Francis and Ouachita Rivers there also were two distinct rises. Both of those in the St. Francis were rather severe. In the Ouachita the first caused some damage, but the second was very little above bankful, and no damage resulted.

The flood in the Tallahatchie had not subsided at the end of January; it will be discussed in a later issue of the REVIEW.

Rains prevailed over the Willamette Basin in the latter part of December. They became heavy on January 1 and flood stages were rather general in the Willamette and most of its tributaries. The overflow was quite extensive, but it subsided rapidly.

Timely warnings of all the January floods were issued.

The usual tabulation of losses caused by floods is being discontinued as a monthly statement. In an effort to prevent duplication that might occur in some cases, and to obtain data that are more nearly complete in other cases, the tabulation will be published at the end of each year.

Table of flood stages in January, 1933

[All dates in January unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Sandusky: Upper Sandusky, Ohio	*Feet* 13	1	1	*Feet* 14.2	1.
ATLANTIC SLOPE DRAINAGE					
Roanoke: Williamston, N. C.	10	Dec. 30	19	12.2	5.
Cape Fear: Elizabethtown, N. C.	20	Dec. 26	1	26.2	Dec. 29.
Peedee:					
Mars Bluff Bridge, S. C.	17	Dec. 15	8	21.2	2.
		12	15	17.3	13, 14.
Poston, S. C.	18	Dec. 19	10	21.4	4.
Saluda: Chappells, S. C.	14	Dec. 27	1	18.6	Dec. 29.
Santee:					
Rimini, S. C.	12	Dec. 14	20	18.1	2.
		26	(1)	13.7	29.
Ferguson, S. C.	12	Dec. 15	24	14.1	2, 3.
		26	(1)	13.3	31.
Savannah: Ellenton, S. C.	14	Dec. 13	22	23.1	Dec. 31.
		26	(1)	17.5	29.
Ocmulgee: Abbeville, Ga.	11	3	8	13.1	5.
Altamaha:					
Charlotte, Ga.	12	2	2	12.8	2.
Everett City, Ga.	10	13	17	10.4	14, 15.
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	28	Feb. 1	16.6	30.
Oostanaula:					
Resaca, Ga.	22	Dec. 28	2	31.2	Dec. 29.
Rome, Ga.	30	do	3	33.8	Dec. 30.

Table of flood stages in January, 1933—Continued

[All dates in January unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
EAST GULF OF MEXICO DRAINAGE—continued					
Coosa:	*Feet*			*Feet*	
Mayos Bar Lock, Ga.	28	Dec. 27	4	37.0	Dec. 30.
Gadsden, Ala.	22	Dec. 13	9	30.3	2.
Lock No. 4, Lincoln, Ala.	17	do	10	23.2	Dec. 18.
Wetumpka, Ala.	45	Dec. 28	1	48.9	Dec. 30.
Alabama:					
Montgomery, Ala.	35	Dec. 17	8	49.5	Dec. 31.
Selma, Ala.	35	do	12	50.8	2.
Millers Ferry, Ala.	35	do	16	51.8	3, 4.
Tombigbee:					
Lock No. 4, Demopolis, Ala.	39	Dec. 13	17	62.7	Dec. 22.
Lock No. 3, Ala.	33	Dec. 12	20	60.6	Dec. 26.
		26	31	38.0	28.
Lock No. 2, Ala.	46	Dec. 14	18	62.5	Dec. 26, 27
Lock No. 1, Ala.	31	do	22	44.4	Dec. 29.
Pearl: Edinburg, Miss.	20	Dec. 25	3	23.1	Do.
West Pearl: Pearl River, La.	13	Dec. 17	25	16.5	Dec. 31, 1.
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Illinois: Peru, Ill.	14	22	(1)	14.5	22, 24, 29.
Ohio Basin					
Scioto:					
Prospect, Ohio	10	1	3	12.1	2.
Circleville, Ohio	10	1	3	14.8	2.
Chillicothe, Ohio	16	2	3	17.1	3.
Licking: Falmouth, Ky.	28	22	23	29.7	22.
Miami: Middletown, Ohio	15	1	1	16.0	1.
Barren: Bowling Green, Ky.	20	23	26	24.7	24.
Green:					
Munfordville, Ky.	28	22	26	35.7	24.
Lock No. 6, Brownsville, Ky.	28	22	27	34.7	25.
Lock No. 4, Woodbury, Ky.	33	22	30	42.5	26.
Lock No. 2, Rumsey, Ky.	34	24	Feb. 5	40.1	31.
West Fork of White:					
Elliston, Ind.	19	1	6	23.9	4.
		23	26	20.9	25.
Edwardsport, Ind.	12	Dec. 25	9	18.8	5.
		22	31	18.1	24–26.
East Fork of White:					
Seymour, Ind.	10	1	3	13.5	1.
		23	24	12.0	23.
Williams, Ind.	10	3	7	15.5	5.
		26	30	13.7	27.
Shoals, Ind.	20	1	8	26.1	6.
		23	31	25.0	28.
White: Decker, Ind.	18	Dec. 31	12	22.6	8.
		24	(1)	21.8	28, 29.
Wabash:					
La Fayette, Ind.	13	1	3	16.4	2.
Covington, Ind.	16	2	5	19.1	3, 4.
Terre Haute, Ind.	14	Dec. 27	6	15.7	Dec. 31.
Vincennes, Ind.	14	3	4	14.0	3, 4.
Mount Carmel, Ill.	16	Dec. 29	16	21.5	8, 9.
		23	(1)	20.9	28, 29.
Cumberland:					
Celina, Tenn.	28	Dec. 31	3	32.3	2.
		23	26	33.5	24.
Lock F, Eddyville, Ky.	50	3	7	52.1	6.
Tennessee:					
Rockwood, Tenn.	20	1	1	20.1	1.
Chattanooga, Tenn.	30	Dec. 29	3	37.6	Dec. 31.
Bridgeport, Ala.	18	do	4	26.0	1.
Guntersville, Ala.	25	do	6	34.4	3.
Decatur, Ala.	20	2	6	20.6	3, 5.
Florence, Ala.	18	Dec. 31	7	20.6	5.
Riverton Lock, Ala.	33	Dec. 30	9	41.1	6.
Savannah, Tenn.	32	Dec. 31	10	40.5	7.
Johnsonville, Tenn.	31	6	9	31.4	8.
Ohio:					
Dam No. 47, Newburgh, Ind.	35	3	3	35.3	3.
		25	Feb. 1	38.6	28.
Evansville, Ind.	35	3	4	35.8	3.
		25	Feb. 2	39.0	28.
Dam No. 48	35	26	Feb. 1	37.7	29.
Mt. Vernon, Ind.	35	26	Feb. 3	37.9	29.
Dam No. 49	35	27	Feb. 4	37.8	30.
Shawneetown, Ill.	35	2	9	36.6	5, 6.
		25	Feb. 6	39.5	31.
Dam No. 50, Fords Ferry, Ky.	32	2	11	37.5	5, 6.
		25	Feb. 7	39.7	31.
Dam No. 52, Brookport, Ill.	35	2	12	39.8	7.
		26	Feb. 4	36.9	31, Feb. 1.
Dam No. 53	38	2	12	42.6	7, 8.
		27	Feb. 5	40.3	Feb. 1.

Table of flood stages in January, 1933—Continued

River and station	Flood stage	Above flood stages—dates From—	Above flood stages—dates To—	Crest Stage	Crest Date
White Basin	*Feet*			*Feet*	
Black: Black Rock, Ark	14	Dec. 31	13	21.8	Dec. 31.
		22	29	18.3	23.
White: Georgetown, Ark	21	1	13	23.6	4.
		25	(1)	22.1	30.
Arkansas Basin					
Petit Jean: Danville, Ark	20	23	25	21.5	24.
Arkansas: Yancopin, Ark	29	13	19	29.7	16, 17.
Red Basin					
Little: Whitecliffs, Ark	25	2	3	25.6	2.
Sulphur:					
Ringo Crossing, Tex	20	Dec. 31	1	22.5	1.
		8	11	23.5	9.
		22	23	21.6	22.
Naples, Tex	22	2	19	25.4	14.
		26	29	22.5	28.
Lower Mississippi Basin					
St. Francis:					
Chaonia, Mo	22	Dec. 31	2	27.9	1.
		22	25	29.9	23.
Fisk, Mo	20	Dec. 25	5	24.2	Dec. 27.
		22	27	24.3	24.
St. Francis, Ark	18	Dec. 30	12	23.4	3.
		23	(1)	22.3	28.
Tallahatchie: Swan Lake, Miss	24	Dec. 16	(1)	31.8	6–11.

Table of flood stages in January, 1933—Continued

River and station	Flood stage	Above flood stages—dates From—	Above flood stages—dates To—	Crest Stage	Crest Date
Lower Mississippi Basin—Cont'd.					
Ouachita:	*Feet*			*Feet*	
Arkadelphia, Ark	12	Dec. 31	3	19.8	Dec. 31.
Camden, Ark	26	2	9	31.9	5.
		26	27	26.0	26, 27.
Mississippi: New Madrid, Mo	34	7	10	34.3	8, 9
Atchafalaya Basin					
Atchafalaya: Atchafalaya, La	22	10	(1)	22.7	23–25.
WEST GULF OF MEXICO DRAINAGE					
Trinity:					
Dallas, Tex	28	9	9	29.9	9.
Trinidad, Tex	28	13	14	28.5	13.
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Coast Fork: Saginaw, Oreg	9	2	3	12.6	2.
Long Tom: Monroe, Oreg	10	2	7	15.6	3.
Santiam: Jefferson, Oreg	10	2	2	10.0	2.
Yamhill: McMinnville, Oreg	35	4	5	43.6	4.
Willamette:					
Eugene, Oreg	12	2	3	13.2	2.
Harrisburg, Oreg	10	3	3	13.4	3.
Albany, Oreg	20	4	4	21.0	4.
Oregon City, Oreg	12	6	6	12.1	6.

[1] Continued into February.

THE WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

[By the Marine Division, W. F. McDonald in charge]

NORTH ATLANTIC OCEAN

By W. F. McDONALD

Atmospheric pressure.—The mean pressure over the North Atlantic Ocean during January, 1933, was generally below normal. The Icelandic LOW was especially persistent and at times very intensely active. As a result the monthly average pressure at Reykjavik was almost four-tenths of an inch below normal. The lowest barometer at that place, 27.38 inches on the 3d, must be recorded amongst the extraordinary low readings of the world, as that figure has been surpassed only a few times.

The average pressure was also more than a tenth of an inch below normal from Bermuda to Nova Scotia and to a lesser degree thence eastward over the Azores to the Iberian Peninsula. (See Table 1.)

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, January, 1933*

Station	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	29.38		30.16	28	28.47	2
Reykjavik, Iceland	29.09	−0.37	30.13	26	27.38	3
Lerwick, Shetland Islands	29.86	+.16	30.62	24	28.77	3
Valencia, Ireland	30.02	+.12	30.59	9	29.16	2
Lisbon, Portugal	30.11	−.04	30.57	7	29.28	28
Madeira	30.08	−.02				
Horta, Azores	30.13	−.03	30.57	5	29.53	27
Belle Isle, Newfoundland	29.80	.00	30.54	14	28.92	8
Halifax, Nova Scotia	29.85	−.13	30.70	14	28.82	29
Nantucket	29.96	−.08	30.62	13	29.07	28
Hatteras	30.06	−.08	30.51	1	29.17	27
Bermuda	30.00	−.16	30.34	11	29.06	28
Turks Island	30.05	.00	30.14	20	29.84	28
Key West	30.07	−.03	30.26	17	29.79	27
New Orleans	30.12	−.01	30.61	1	29.75	26
Cape Gracias, Nicaragua	29.93	−.05	30.02	1	29.88	23

NOTE.—All data based on a. m. observations only with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

An excess in average pressure for the month was observed over the British Isles and North Sea. The highest readings for the Atlantic area proper, 30.68 inches, were reported from several ships near the Azores on the 12th and 13th. The Atlantic HIGH was generally well developed and prominent during the first half of the month, but waned in intensity after the 15th, and was badly disrupted from the 22d until the end of the month.

Cyclone and sales.— and gic storms on the North Atlantic were unusually extensive and violent. The preceding month closed with stormy conditions paevalent over the northeastern part of the ocean and this condition continued to intensify as a deep LOW progressed towards Iceland from mid-ocean near latitude 50°, dnring the first three days of January. (See Charts VIII and IX.)

Winds of hurricane violence were encountered by a number of ships over the eastern part of the northern trans-Atlantic routes on the 1st and 2d. Three British steamships, the *Duchess of Atholl*, the *Cameronia*, and the *Lepanto*, reported corrected barometer readings below 28 inches. The lowest reading on the *Lepanto* was 27.43 inches (corrected), at 6 a. m. of the 2d, when the ship was near latitude 54° N. and longitude 32° W. This record must also be placed in the small group of barometer readings which have fallen below 27.50 inches, most of which at sea have been reported from the same part of the North Atlantic.

Gales occurred on some part of the North Atlantic on all but four scattered days in the month, with most widespread and violent storminess on the 1st and 2d and from the 8th to 13th and 25th to 28th. Hurricane force was reported from 10 vessels, eight of these cases on the 1st and 2d in the area north of the 45th parallel and east of the 40th meridian. The other two cases were observed southeast of Cape Hatteras on the 26th and 27th, in connection with an intense, slow moving disturbance